Also, many jurisdictions use statistics from the Burrau of Labor Statistics regarding family budgets.

EXHIBIT 16
DATE 2/12/09
HB 3

Journal of Forensic Economics 15(3), 2002, pp. 295-301

Patton-Nelson Personal Consumption Tables 2000-2001: Updated and Revised

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The Patton-Nelson Personal Consumption Tables were last updated in the Winter 2000 issue of the *Journal of Forensic Economics* using 1997-98 consumption data. Since these tables are widely used by forensic economists and by Lawyers and Judges Publishing Co., it is appropriate to provide consumption percentages based on 2000-01 data. Included in this paper are some revisions as suggested by Bell and Taub (2002).

Bell and Taub provide an alternative approach for allocating certain adult-only expenditures such as alcohol and tobacco which is conceptually appealing and has been added to the consumption model originally suggested by Patton-Nelson (1991). Bell and Taub's approach uses the average number of adults in the household, which can be derived from the reported Bureau of Labor Statistics (BLS) Consumer Expenditure Data by subtracting the reported average number of children, 18 or less, in the household from the household size. For example, if the average number of children for a three-person family is 1.2 then the average number of adults is 1.8. This change increases allocated consumption expenditures from the original Patton-Nelson model for an average adult when the average number of adults is less than 2 and decreases it when it is more than 2. This method was used for expenditures for alcohol, tobacco, life insurance and transportation.

In addition, Bell and Taub provide detailed arguments regarding "utilities and housekeeping supplies" while Patton-Nelson assumes that only 50% are indivisible. It is not possible to determine the exact amount of indivisible expenses in the category. However, Bell and Taub's reasoning is compelling, but with many of the costs in this category, family size will have an impact. Therefore 25% of these costs were considered divisible across the members of the household. This reduces the direct personal consumption costs of one adult. All other expenditure categories were afforded the treatment as discussed in Patton and Nelson (1991) in determining allocation to household members.

In determining the economic loss to the estate in a wrongful death claim, the forensic economist must adjust future wage loss for that portion of earnings that would have been consumed by the decedent. "Therefore, any factor or percentage, which is used in this estimation process must necessarily relate to the earnings stream and family size of the decedent" (Ruble, Patton & Nelson, 2001, p. 175). This percentage is applied to total family income to arrive at the amount of the consumption adjustment. Finally the consumption adjustment is subtracted from the future wage loss to arrive at the net economic loss to the estate.

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Table 1 (2000-01)
Summary of BLS Consumer Expenditure Survey

Family Size	Income Bracket: $10,000 to $14,999	$15,000 to $19,999	$20,000 to $29,999	$30,000 to $39,999	$40,000 to $49,999	$50,000 to $69,999	$70,000 and over
One Person							
Average Income Before Taxes	$12,158	$17,146	$24,329	$34,113	$43,732	$57,351	$107,709
Total Average annual expenditures Excluding Pensions and Social Security	$17,628	$19,918	$22,760	$26,792	$30,809	$35,465	$52,443
As a % of Income	145.0%	116.2%	93.6%	78.5%	70.4%	61.8%	48.7%
Total Average annual expenditures Excluding Pensions and Social Security, Vehicle Purchases and Household Furnishings and Equipment	$15,446	$17,889	$19,980	$23,382	$27,072	$30,930	$46,145
As a % of Income	127.0%	104.3%	82.2%	68.5%	61.9%	53.9%	42.8%
Two Person							
Average Income Before Taxes	$12,524	$17,438	$24,467	$34,634	$44,457	$58,956	$113,250
Total Average annual expenditures Excluding Pensions and Social Security	$23,177	$25,978	$29,258	$33,845	$37,674	$43,087	$60,135
As a % of Income	185.1%	149.0%	119.6%	97.7%	84.7%	73.1%	53.1%
Total Average annual expenditures Excluding Pensions and Social Security, Vehicle Purchases and Household Furnishings and Equipment	$19,927	$22,850	$25,688	$28,778	$31,468	$37,091	$51,192
As a % of Income	159.1%	131.0%	105.0%	83.1%	70.8%	62.9%	45.2%
Three Person							
Average Income Before Taxes	$12,534	$17,234	$24,686	$34,601	$44,365	$58,612	$112,948
Total Average annual expenditures Excluding Pensions and Social Security	$23,391	$24,745	$30,005	$36,926	$39,484	$45,752	$65,466
As a % of Income	186.6%	143.7%	121.5%	106.7%	89.0%	78.1%	57.9%
Total Average annual expenditures Excluding Pensions and Social Security, Vehicle Purchases and Household Furnishings and Equipment	$20,193	$22,032	$25,587	$30,236	$33,396	$38,649	$55,218
As a % of Income	161.1%	127.9%	103.6%	87.4%	75.0%	65.7%	48.9%
Four Person							
Average Income Before Taxes	$12,654	$17,346	$24,787	$34,415	$44,544	$59,450	$114,148
Total Average annual expenditures Excluding Pensions and Social Security	$29,623	$27,194	$30,679	$36,954	$42,408	$47,390	$70,404
As a % of Income	234.2%	157.7%	123.8%	107.4%	95.2%	79.5%	61.7%
Total Average annual expenditures Excluding Pensions and Social Security, Vehicle Purchases and Household Furnishings and Equipment	$24,196	$22,066	$26,538	$31,168	$35,663	$40,358	$59,913
As a % of Income	191.2%	127.6%	107.1%	90.6%	80.1%	67.9%	52.5%
Five or More Person							
Average Income Before Taxes	$12,630	$17,644	$24,784	$34,560	$44,756	$58,839	$115,759
Total Average annual expenditures Excluding Pensions and Social Security	$22,777	$27,004	$32,461	$35,891	$44,116	$50,174	$74,631
As a % of Income	180.3%	153.0%	131.0%	103.9%	98.6%	85.3%	64.5%
Total Average annual expenditures Excluding Pensions and Social Security, Vehicle Purchases and Household Furnishings and Equipment	$20,895	$23,325	$27,808	$31,434	$37,537	$41,746	$63,112
As a % of Income	165.4%	132.2%	112.2%	91.0%	83.9%	70.9%	54.5%

Table 2 (2000-01)
Consumption Costs for Adults as Percent of Income From Analysis of BLS Consumer Expenditure Survey

	Family Income Bracket						
Family Size	$10,000 to $14,999	$15,000 to $19,999	$20,000 to $29,999	$30,000 to $39,999	$40,000 to $49,999	$50,000 to $69,999	$70,000 and over
One Person							
Average Income	$12,188	$17,146	$24,320	$34,113	$43,732	$57,331	$107,709
Male Consumption	145.0% -127.0%	116.2% - 104.3%	93.6% - 82.2%	78.5% - 68.5%	70.4% - 61.9%	61.8% - 53.9%	48.7% - 42.8%
Female Consumption	145.0% -127.0%	116.2% - 104.3%	93.6% - 82.2%	78.5% - 68.5%	70.4% - 61.9%	61.8% - 53.9%	48.7% - 42.8%
Two Person							
Average Income	$12,524	$17,438	$24,467	$34,634	$44,457	$58,956	$113,250
Male Consumption	63.1%	50.9%	38.8%	32.3%	28.3%	23.2%	15.8%
Female Consumption	63.8%	52.1%	39.5%	32.9%	29.3%	23.8%	16.2%
Three Person							
Average Income	$12,534	$17,224	$24,686	$34,601	$44,385	$58,812	$112,948
Male Consumption	49.9%	35.1%	30.3%	27.7%	22.6%	19.3%	13.2%
Female Consumption	51.9%	35.8%	31.2%	28.2%	23.8%	19.8%	13.5%
Four Person							
Average Income	$12,654	$17,246	$24,787	$34,415	$44,544	$59,459	$114,148
Male Consumption	51.2%	35.8%	26.6%	22.8%	21.0%	16.6%	12.0%
Female Consumption	52.7%	36.3%	27.7%	23.1%	21.2%	17.1%	12.3%
Five or More Person							
Average Income	$12,630	$17,641	$24,784	$34,560	$44,766	$58,839	$115,759
Male Consumption	35.7%	31.6%	27.1%	20.1%	20.1%	17.0%	11.4%
Female Consumption	36.7%	33.2%	27.9%	20.3%	21.0%	17.5%	12.1%

The Bureau of Labor Statistics (BLS) Consumer Expenditure Data is still the most current and comprehensive consumption data available. Data covering the two-year period of 2000-01 was obtained for use in this study. These data are the updated version of the BLS data used in the 1991, 1998 and 2000 articles and have been used to generate the following update. The tables are presented and numbered in an identical manner as previous Patton-Nelson articles so that the reader can continue to use these earlier articles for explanatory and reference purposes.

Table 1 summarizes the 2000-01 BLS Consumer Expenditure Survey data by income level and family size. As discussed in the 1991 article, the proper value of family consumption costs falls somewhere between the two percentage figures shown in Table 1. Table 2 results from an analysis of expenditure categories in the BLS data to arrive at an estimate of consumption for an adult male or female within each family size category across income levels.

Regressions in natural log form were run on the data in Table 2 for each family size and each gender to produce the following equations where X is the natural logarithm of the family income and Y is the natural logarithm of the percent of family income that would have been directly consumed by the deceased[1]. The resulting regression equations are presented in Figure 1.

2000-2001

Adult Males

Family Size		Equation	R^2
1	High	Y = 9.296795 - 0.470113 X	0.9899
	Low	Y = 9.264129 - 0.479131 X	0.9845
2		Y = 9.898194 - 0.613981 X	0.9970
3		Y = 8.765673 - 0.528701 X	0.9832
4		Y = 9.034857 - 0.563674 X	0.9893
5 or More		Y = 8.679348 - 0.534640 X	0.9810

Adult Females

Family Size		Equation	R^2
1	High	Y = 9.296795 - 0.470113 X	0.9899
	Low	Y = 9.264129 - 0.479131 X	0.9845
2		Y = 9.887773 - 0.610722 X	0.9959
3		Y = 8.776021 - 0.527057 X	0.9819
4		Y = 9.038407 - 0.561946 X	0.9934
5 or More		Y = 8.623353 - 0.525899 X	0.9716

Figure 1
Equations for Consumption Regressed on Average Income

[1]The data for the "$10,000 to $14,999" income category was not included in the regression analysis. It is considered unlikely that this income category would be encountered in forensic economics practice. In addition, it is probable that income is less related to consumption due to federal and state aid that is likely to be received by individuals in this income category, especially in larger families.

Table 3 (2000-01)
Incremental Consumption Cost Percentage

	Family Size				
	1				
Income Level	Low — High	2	3	4	5
		Male			
20,000	91.7 — 103.7.	45.5	34.1	31.6	29.5
25,000	82.4 — 93.3	39.7	30.3	27.8	26.2
30,000	75.5 — 85.7	35.5	27.5	25.1	23.8
35,000	70.2 — 79.7	32.3	25.4	23.0	21.9
40,000	65.8 — 74.8	29.7	23.6	21.4	20.4
45,000	62.2 — 70.8	27.7	22.2	20.0	19.1
50,000	59.1 — 67.4	25.9	21.0	18.8	18.1
55,000	56.5 — 64.4	24.4	20.0	17.9	17.2
60,000	54.2 — 61.8	23.2	19.1	17.0	16.4
65,000	52.2 — 59.6	22.1	18.3	16.3	15.7
70,000	50.3 — 57.5	21.1	17.6	15.6	15.1
75,000	48.7 — 55.7	20.2	17.0	15.0	14.6
80,000	47.2 — 54.0	19.4	16.4	14.5	14.1
85,000	45.9 — 52.5	18.7	15.9	14.0	13.6
90,000	44.6 — 51.1	18.1	15.4	13.5	13.2
95,000	43.5 — 49.8	17.5	15.0	13.1	12.8
100,000	42.4 — 48.6	16.9	14.6	12.7	12.5
110,000	40.5 — 46.5	16.0	13.9	12.1	11.9
120,000	38.9 — 44.6	15.1	13.2	11.5	11.3
130,000	37.4 — 43.0	14.4	12.7	11.0	10.8
140,000	36.1 — 41.5	13.8	12.2	10.5	10.4
150,000	34.9 — 40.2	13.2	11.8	10.1	10.0
		Female			
20,000	91.7 — 103.7	46.5	35.0	32.2	30.4
25,000	82.4 — 93.3	40.6	31.1	28.4	27.1
30,000	75.5 — 85.7	36.3	28.3	25.7	24.6
35,000	70.2 — 79.7	33.0	26.1	23.5	22.7
40,000	65.8 — 74.8	30.5	24.3	21.8	21.1
45,000	62.2 — 70.8	28.3	22.8	20.4	19.9
50,000	59.1 — 67.4	26.6	21.6	19.3	18.8
55,000	56.5 — 64.4	25.1	20.6	18.3	17.9
60,000	54.2 — 61.8	23.8	19.6	17.4	17.1
65,000	52.2 — 59.6	22.6	18.8	16.6	16.4
70,000	50.3 — 57.5	21.6	18.1	15.9	15.7
75,000	48.7 — 55.7	20.7	17.5	15.3	15.2
80,000	47.2 — 54.0	19.9	16.9	14.8	14.7
85,000	45.9 — 52.5	19.2	16.3	14.3	14.2
90,000	44.6 — 51.1	18.6	15.9	13.8	13.8
95,000	43.5 — 49.8	18.0	15.4	13.4	13.4
100,000	42.4 — 48.6	17.4	15.0	13.0	13.0
110,000	40.5 — 46.5	16.4	14.3	12.4	12.4
120,000	38.9 — 44.6	15.6	13.6	11.8	11.9
130,000	37.4 — 43.0	14.8	13.1	11.3	11.4
140,000	36.1 — 41.5	14.2	12.6	10.8	10.9
150,000	34.9 — 40.2	13.6	12.1	10.4	10.5

Table 3 contains the results of calculating the percentage of family income,[2] which would have been consumed by an adult male or female who is now deceased. These are the figures, which are used to determine the magnitude of the adjustment for personal consumption costs in wrongful death or survival actions. For example, a female adult from a family of three having

[2]Income as used here refers to gross family income rather than income after taxes and, includes the gross income of all adults in the family, not just that of the deceased.

total family income of $50,000 would have consumed 21.6 % of that income, or $10,800, using Table 3. This represents the annual consumption cost that should be used as the adjustment in calculating the economic loss in a wrongful death claim.[3]

The percentages in Table 3, when compared to the 1997-98 data, show slightly higher personal consumption for both adult males and females across all multi-person income levels on a nominal basis. It seems appropriate that these percentages would increase as based on the data in Table 1, average annual expenditures excluding pensions and Social Security increased on average 5.3% as a percent of income for the income categories included in the regression analysis. This relates favorably to the 6.5% increase in the Consumer Price Index (CPI-U) from the end of 1998 to the end of 2001.

Conclusion

Updated consumption percentages using a revised Patton-Nelson model have been calculated and presented. Does the use of a revised model make a difference in the resulting consumption percentages? It appears that it makes little difference. A comparison of the percentages in Table 3 with percentages determined using the original Patton-Nelson model revealed an average difference of only .4% across income levels for both males and females with no difference greater than 1.7%. While revising the model makes little difference in consumption percentages, it does provide more conceptually appealing support for those consumption categories that were affected.

The use of consumption percentages based upon family income continues to be the most appropriate approach for estimating the consumption adjustment in wrongful death actions. The 2000-01 Patton-Nelson consumption percentages provide forensic economists with a practical and conceptually defendable tool in determining this adjustment.

The consumption and income data used in this study was collected over a two-year period (2000-2001). As a result, it contains an averaging of price and income levels over that two-year period. Therefore, if the forensic economist finds it necessary to deflate current income in using Table 3, it should be rolled back to the beginning of 2001. The selection of an appropriate deflation rate is a matter of professional judgment but should reflect the wage growth from the beginning of 2001 to the present. It could be a rate specific to the situation, the region or a national rate as data are available and reliable.

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[3]In applying the percentages of Table 3, it is assumed that the analysis of economic loss would extend only through the deceased's estimated worklife. Since life expectancy exceeds worklife, it is necessary to account for consumption from the end of worklife to the end of life expectancy. The authors recommend using an assumption that pension and social security receipts will be sufficient to offset post worklife consumption.

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